



ENERGY
TRANSITION
PARTNERSHIP

Powering Prosperity and Enabling Sustainability in South East Asia



Upgrade of Java-Bali Control Centre through expansion and development of smart grids



PROJECT INFOSHEET



Environment and
Climate Change Canada
Environnement et
Changement climatique Canada



Department for
Business, Energy
& Industrial Strategy

IKEA Foundation

WINDWARD Fund



PROJECT FACTS

Country: Indonesia

Detailed design by: Mid-2022

Construction by: End of 2023

Start date: 1 October 2021

Implementer: ELC/CESI

Partnerships: PLN,
Asian Development Bank

BACKGROUND

Indonesia is the largest energy consumer in the Association of Southeast Asian Nations (ASEAN), accounting for more than 36% of the region. The country also generates a significant share of the global greenhouse gas emissions, with 1.5% of the world's total (ranked 12th in the world and 3rd in Asia, after China 20.1% and South Korea 1.9%).

AIM OF THE PROJECT

Considering the expected growth in demand and energy generation, currently mostly based on fossil fuels, ETP develops pathways for rapid increase in renewable energy and expansion of smart grids by assisting the Indonesian electricity company – PLN in modernizing its energy control system and electricity control operations to facilitate clean renewable energy to 160 million consumers.

PROJECT STRATEGY

APPROACH

ETP provides PLN (Persero) UIP2B JAMALI (Main Unit Load Management Center Java Madura Bali) with the necessary multi-disciplinary analysis and specifications for the planning, construction, supervision, integration and commissioning of the Main SCADA/EMS Control Center (MCC) and Disaster Recovery Control Center (DRC).






REASONS FOR IMPLEMENTATION

- Existing SCADA/EMS Master Station end of life in 2021
- Need for expansion of the Java-Bali electrical power system
- Anticipation of an entry of renewable energy generators, storage systems and HVDC devices
- Anticipation of changes in regulations and transaction model
- Need for standards compliance
- Opportunity to review efficiency and effectiveness of system operation
- Anticipation of disruptive technology

RESULTS AND IMPACT

The project supports upgrades of the Main Control Center (MCC) and Disaster Recovery Center (DRC) and the Advanced Control Center system SCADA/EMS and its supporting systems, including technical aspects, operational aspects, and organisational aspects.

The project creates reliable, efficient and economical operation of the Java-Bali electric power system through:

-  adding data, updating of existing applications and adding technological applications that have a direct impact enhancing the capacity, capability and speed of H/W and S/W of the Master Station Supervisory Control and Data Acquisition (SCADA) and Emergency Management System (EMS)
-  support of the power system frequency and voltage stability through the construction of energy storage systems and interconnections with High Voltage Direct Current (HVDC) electrical power transmission system
-  application of new and advanced technologies and tools to assist system operators improve its situational awareness and reduce variable renewable energy curtailment
-  carrying out accurate system conditions analysis, load predictions, effectively using operations validation functions and receiving recommendations for a more reliable system condition
-  a comprehensive classroom and on-the-job training program to ensure a complete knowledge transfer to PLN, designed to allow optimal use and maintenance of all the specific components

FUTURE OUTLOOK

The project unlocks the potential of scaling up the planned interventions to integrate greater renewable energy in the energy mix by strengthening Indonesian electric power system, and interconnectedness between existing operations.

This would require all hands on the deck including collaborative partnerships among local government authorities, funders, partners and civil society.

The project includes a procurement of the control center equipment and housing infrastructure. It also seeks to facilitate partnerships to support ancillary and grid modernization of the transmission and distribution networks to ensure systematic capability enhancement of the country to move to net zero energy system.



CONTACT

John Cotton – Senior Programme Manager Energy Transition Partnership, johnrc@unops.org, +8562022225021

Aang Darmawan – Indonesia Country Manager, aangd@unops.org, +62 813 9929 4337

Suraso Isnandar – General Manager ACCJAMALI, suraso@pln.co.id

Dhany Barus – Senior Project Manager, barus@pln.co.id

LinkedIn: <https://www.linkedin.com/company/southeast-asia-energy-transition-partnership/>

Website: <https://www.energytransitionpartnership.org>

